FILE 'HOME' ENTERED AT 14:48:23 ON 09 NOV 2010

=> file CAPlus

 COST IN U.S. DOLLARS
 SINCE FILE
 TOTAL

 ENTRY
 SESSION

 FULL ESTIMATED COST
 0.22
 0.22

FILE 'CAPLUS' ENTERED AT 14:49:06 ON 09 NOV 2010 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishere listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 9 Nov 2010 VOL 153 ISS 20 FILE LAST UPDATED: 8 Nov 2010 (20101108/ED) REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2010 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2010

CAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2010.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s macrolide

1.2

12418 MACROLIDE

9738 MACROLIDES

L1 16440 MACROLIDE

(MACROLIDE OR MACROLIDES)

=> s 11 and bridge?

165346 BRIDGE?

93 L1 AND BRIDGE?

=> s 12 and erythromycin

23491 ERYTHROMYCIN 605 ERYTHROMYCINS

23555 ERYTHROMYCIN

(ERYTHROMYCIN OR ERYTHROMYCINS)

L3 26 L2 AND ERYTHROMYCIN

=> dis 13 1-26 bib abs

L3 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN

AN 2010:1069481 CAPLUS <<LOGINID::20101109>>

DN 153-334319

TI Preparation of bridged biaryl amide macrolide 6,11-bicyclolide derivatives for therapeutic use as anti-inflammatory and antibacterial prodrugs

IN Kim, In Jong; Phan, Ly Tam; Or, Yat Sun

PA Enanta Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 32pp. CODEN: PIXXD2

DT Patent

LA English FAN.CNT 1 PATENT NO. KIND DATE APPLICATION NO. PΙ WO 2010096051 A1 20100826 WO 2009-US34407 20090218 W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM PRAI WO 2009-US34407 20090218

AB This invention disclosed macrolide 6,11-bicyclolide derivs. I (X = L-Lys, L-Gln) and pharmaceutically acceptable salts thereof which exhibit antibacterial properties in vivo. The present invention further

relates to pharmaceutical compns. comprising the aforementioned compds. for administration to a subject in need of antibiotic treatment. The invention also relates to methods of treating a bacterial infection in a subject by administering a pharmaceutical composition comprising the compds. of the present invention. The invention further include process by which to make the compds of the present invention.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L3 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2010:553892 CAPLUS <<LOGINID::20101109>>
- DN 153:11392
- TI An Efficient Large-Scale Synthesis of EDP-420, a First-in-Class Bridged Bicyclic Macrolide (BBM) Antibiotic Drug Candidate
- AU Xu, Guoyou; Tang, Datong; Gai, Yonghua; Wang, Guoqiang; Kim, Heejin; Chen, Zhiqang; Phan, Ly T.; Or, Yat Sun; Wang, Zhe
- CS Enanta Pharmaceuticals, Inc., Watertown, MA, 02472, USA
- SO Organic Process Research & Development (2010), 14(3), 504-510 CODEN: OPRDFK; ISSN: 1083-6160
- PB American Chemical Society
- DT Journal
- LA English
- OS CASREACT 153:11392
- GI

AB A multistep, practical, and cost-effective synthesis of novel bridged bicyclic macrolide drug candidate EDP-420 (1) is described. Starting from inexpensive and com. available erythromycin A 9-oxime, the current chemical process involves a series of transformations: triacetylation, Pd-catalyzed 0,0-bis-allylation (bridge formation), acid-catalyzed sugar cleavage, oxime reduction, acetylation, Os-catalyzed bridge olefin oxidative cleavage, Corey-Kim oxidation, bridge oxime formation, deprotection, and final purification Multikilogram quantities have been synthesized.

Ι

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L3 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN AN 2009:1326111 CAPLUS <<LOGINID::20101109>>
- DN 151:491348

- TI Preparation of 2'-0-3'-N-bridged erythromycin
- macrolides as antiinflammatory agents
- IN Bukvic-Krajacic, Mirjana; Hutinec, Antun; Kragol, Goran; Kujundzic, Nedjeljko; Marusic-Istuk, Zorica
- PA GlaxoSmithKline Istrazivacki Centar Zagreb D.O.O., Croatia
- SO PCT Int. Appl., 87pp.
- CODEN: PIXXD2
- DT Patent
- LA English

| FAN. | CNT 1   |      |      |     |     |     |      |      |     |      |      |      |     |     |     |      |     |
|------|---------|------|------|-----|-----|-----|------|------|-----|------|------|------|-----|-----|-----|------|-----|
|      | PATENT  | NO.  |      |     | KIN | D   | DATE |      |     | APPL | ICAT | ION  | NO. |     | D   | ATE  |     |
|      |         |      |      |     |     | -   |      |      |     |      |      |      |     |     |     |      |     |
| PI   | WO 2009 | 1301 | 89   |     | A1  |     | 2009 | 1029 |     | WO 2 | 009- | EP54 | 685 |     | 2   | 0090 | 420 |
|      | W:      |      |      |     |     |     | ΑT,  |      |     |      |      |      |     |     |     |      |     |
|      |         | CA,  | CH,  | CN, | CO, | CR, | CU,  | CZ,  | DE, | DK,  | DM,  | DO,  | DZ, | EC, | EE, | EG,  | ES, |
|      |         | FI,  | GB,  | GD, | GE, | GH, | GM,  | GT,  | HN, | HR,  | HU,  | ID,  | IL, | IN, | IS, | JP,  | KE, |
|      |         | KG,  | KM,  | KN, | KΡ, | KR, | ΚZ,  | LA,  | LC, | LK,  | LR,  | LS,  | LT, | LU, | LY, | MA,  | MD, |
|      |         | ME,  | MG,  | MK, | MN, | MW, | MX,  | MY,  | ΜZ, | NA,  | NG,  | NI,  | NO, | NZ, | OM, | PG,  | PH, |
|      |         | PL,  | PT,  | RO, | RS, | RU, | SC,  | SD,  | SE, | SG,  | SK,  | SL,  | SM, | ST, | SV, | SY,  | TJ, |
|      |         | TM,  | TN,  | TR, | TT, | TZ, | UA,  | UG,  | US, | UΖ,  | VC,  | VN,  | ZA, | ZM, | zw  |      |     |
|      | RW:     | AT,  | BE,  | BG, | CH, | CY, | CZ,  | DE,  | DK, | EE,  | ES,  | FI,  | FR, | GB, | GR, | HR,  | HU, |
|      |         | ΙE,  | IS,  | IT, | LT, | LU, | LV,  | MC,  | MK, | MT,  | NL,  | NO,  | PL, | PT, | RO, | SE,  | SI, |
|      |         |      |      |     |     |     | CG,  |      |     |      |      |      |     |     |     |      |     |
|      |         | TD,  | TG,  | BW, | GH, | GM, | KE,  | LS,  | MW, | ΜZ,  | NA,  | SD,  | SL, | SZ, | TZ, | UG,  | ZM, |
|      |         | ZW,  | AM,  | ΑZ, | BY, | KG, | ΚZ,  | MD,  | RU, | TJ,  | TM   |      |     |     |     |      |     |
| PRAI | US 2008 | -472 | 16P  |     | P   |     | 2008 | 0423 |     |      |      |      |     |     |     |      |     |
| os   | MARPAT  | 151: | 4913 | 48  |     |     |      |      |     |      |      |      |     |     |     |      |     |
| CT   |         |      |      |     |     |     |      |      |     |      |      |      |     |     |     |      |     |

AB Preparation of 2'-0-3'-N-bridged erythromycin macrolides I, wherein A is a bivalent radical selected from CO. N(R5)CH2, CH2N(R5), NHCO, CONH, CH(OH), C(=NOH); R1 is α-L-cladinosyl; R2 is H, R3 is H, alkyl; R4 is alkyl, alkylamino, aryl, heterocyclic, bicyclic heterocyclic, heteroaryl; R5 is H, alkyl, were prepared and used as antiinflammatory agents. Title macrolides were used for the treatment of neutrophil dominated inflammatory diseases resulting from neutrophilic infiltration and/or diseases associated with altered cellular functionality of neutrophils selected from chronic obstructive pulmonary disease, cystic fibrosis, diffuse panbronchiolitis, bronchiolitis obliterans, bronchitis, bronchiectasis, adult respiratory distress syndrome, severe or steroid-resistant asthma, emphysema, chronic rhinosinusitis, rheumatoid arthritis, gouty arthritis, inflammatory bowel disease, glomerulonephritis, damage from ischemic reperfusion, atherosclerosis, psoriasis, vasculitis, systemic lupus erythematosus,

systemic inflammatory response syndrome, sepsis, ischemia-reperfusion injury, rosacea, periodontitis, gingival hyperplasia and prostatitis syndrome. Thus, N¹-benzyl-2¹-0,3¹-N-(carbonimidoyl)-3¹-N-demethyl-9-deoxo-9a-methyl-9a-aza-9a-homo-erythromycin was prepared and tested in mice as antiinflammatory agent. And showed more than 50 % inhibition of edema applied topically once in a dose 500pg/ear. Title compds. exhibit 40 % or more inhibition of interleukin-6 (II-6) production in LPS-stimulated splenocytes treated by the compound at 50  $\mu\rm M$  or/and 25  $\mu\rm M$  concentration

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L3 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2009:645054 CAPLUS <<LOGINID::20101109>>
- DN 151:163036
- TI C-9 Alkenylidine bridged macrolides: WO2008061189
- AU Poce, Giovanna; Porretta, Giulio Cesare; Biava, Mariangela
- CS Dipartimento di Chimica e Tecnologie del Farmaco, Sapienza University of Rome, Rome, 00185, Italy
- SO Expert Opinion on Therapeutic Patents (2009), 19(6), 901-906 CODEN: EOTPEG; ISSN: 1354-3776
- PB Informa Healthcare
- DT Journal; General Review
- LA English
- AB A review. Ketolides, which represent the third generation of erythromycin A derivs, were developed as a result of the need for new and potent antibacterial agents. This class of compds. has a significantly improved pharmacokinetic profile and, above all, shows activity against macrolide-resistant strains. When compared with other macrolides, ketolide structural differences are characterized by the removal of the 3-O-cladinose molety and by a heteroary1-alkyl side chain attached to the macrocycle by a flexible linker. The bridged biocyclic ketolides (BBK) are one of the three classes of ketolide; the present application from Enanta Pharmaceuticals, Inc. discloses a series of novel C-9 alkenylidine bridged macrolides belonging to BBK. These compds. are 3,6- and 6,11-bicyclolides, which have the alkenylidine second anchor
- portion attached to C-9 of the mol.

  RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
  ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L3 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2009:615961 CAPLUS <<LOGINID::20101109>>
- DN 150:555879
- TI Use of bridged macrolides or tylosin derivatives in treating inflammatory bowel diseases
- IN Phan, Ly Tam; Or, Yat Sun
- PA Enanta Pharmaceuticals, Inc., USA
- SO U.S. Pat. Appl. Publ., 21 pp. CODEN: USXXCO
- DT Patent
- LA English
- FAN.CNT 1

|    | PATENT  | NO.  |     |     | KIN | D   | DATE |      |     | APPL | ICAT | ION : | NO. |     | D2  | ATE  |     |
|----|---------|------|-----|-----|-----|-----|------|------|-----|------|------|-------|-----|-----|-----|------|-----|
|    |         |      |     |     |     | _   |      |      |     |      |      |       |     |     |     |      |     |
| PI | US 2009 | 0131 | 343 |     | A1  |     | 2009 | 0521 |     | US 2 | -800 | 2709  | 67  |     | 2   | 0081 | 114 |
|    | WO 2009 | 0649 | 53  |     | A1  |     | 2009 | 0522 |     | WO 2 | 008- | US83  | 502 |     | 2   | 0081 | 114 |
|    | W:      | ΑE,  | AG, | AL, | AM, | AO, | AT,  | AU,  | AZ, | BA,  | BB,  | BG,   | BH, | BR, | BW, | BY,  | BZ, |
|    |         | CA,  | CH, | CN, | CO, | CR, | CU,  | CZ,  | DE, | DK,  | DM,  | DO,   | DZ, | EC, | EE, | EG,  | ES, |
|    |         | FΙ,  | GB, | GD, | GE, | GH, | GM,  | GT,  | HN, | HR,  | HU,  | ID,   | IL, | IN, | IS, | JP,  | KE, |
|    |         | KG,  | KM, | KN, | KP, | KR, | KZ,  | LA,  | LC, | LK,  | LR,  | LS,   | LT, | LU, | LY, | MA,  | MD, |
|    |         | ME,  | MG, | MK, | MN, | MW, | MX,  | MY,  | MZ, | NA,  | NG,  | NI,   | NO, | NZ, | OM, | PG,  | PH, |

```
PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ,
             TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,
             IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK,
             TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
             TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
PRAI US 2007-988257P
                         P
                               20071115
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
    MARPAT 150:555879
    The invention provides methods utilizing bridged
     macrolide or tylosin derivs. for the treatment of patients with
     inflammatory bowel diseases. The methods of the invention provide for the
     administration to a patient of a therapeutically effective amount of a
```

- acceptable derivs. thereof, and combinations thereof for a period of time sufficient to obtain a desired alleviation of one or more symptoms of the
- ANSWER 6 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN 2008:1410170 CAPLUS <<LOGINID::20101109>>

inflammatory bowel disease.

- AN DN 150:144767
- TI Synthesis of 3.6-bicyclolides: A novel class of macrolide
- antibiotics
- Gai, Yonghua; Tang, Datong; Xu, Guoyou; Chen, Zhigang; Polemeropoulos, ΑU Alexander; Wang, Zhe; Or, Yat Sun
- Enanta Pharmaceuticals, Inc., Watertown, MA, 02472, USA
- Bioorganic & Medicinal Chemistry Letters (2008), 18(24), 6315-6318 SO CODEN: BMCLE8; ISSN: 0960-894X

bridged macrolide or a tylosin derivative, pharmaceutically

PB Elsevier Ltd.

AB

- DT Journal
- LA English
- CASREACT 150:144767 OS
- AB The synthesis of 3,6-bicyclolides from erythromycin A oxime is described. This novel class of bridged bicyclic

macrolides demonstrates potent in vitro and in vivo activities against a broad spectrum of bacteria including resistant respiratory tract pathogens.

- osc.g 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS) RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L3 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2008:1017158 CAPLUS <<LOGINID::20101109>>
- DN 149:426170
- ΤТ Descladinosyl erythromycin in phosgene-assisted cyclic 3,6-ether formation
- ΑU Heagelund, Audun; Undheim, Kiell
- Department of Chemistry, University of Oslo, Oslo, N-0315, Norway CS
- SO Tetrahedron Letters (2008), 49(39), 5569-5571 CODEN: TELEAY; ISSN: 0040-4039
- PB Elsevier Ltd.
- DT Journal
- LA English
- CASREACT 149:426170 OS
- Erythromycin A has been converted into a 3,6-bridged
  - ether via a C-3 chloroformate by nucleophilic addition of the hydroxyl function at C-6. Further transformations afforded
    - N-demethy1-3-0-descladinosylerythromycin A
    - 2',3'-carbamate-11,12-carbonate-3,6-ether in 59% overall yield over four reaction steps from (9E)-erythromycin A 9-(0-allyloxime). In

conclusion, we have shown that a 3,6-bridged ether structure is formed when a 3-0-descladinosylerythromycin A derivative, with a free hydroxy group at C-6, is treated with phosgene. The cyclization is rationalized as an intramol. nucleophilic displacement of the intermediate chlorocarbonate of the 3-hydroxy group. The antibacterial activities of title compds.were measured against Staphylococcus aureus ATCC 25923 and Escherichia coli ATCC 25922. The compds. were inactive within the limits of the anal.

OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L3 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN AN 2008:620269 CAPLUS <<LOGINID::20101109>> DN 148:586.081
TI Preparation of C-9 alkenylidine bridged macrolides for use as prodrugs in antiblotic therapeutic agents
IN Phan, Ly Tam; Qlu, Yao-Ling; Or, Yat Sun
```

PA Enanta Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 137pp.

CODEN: PIXXD2 DT Patent

LA English

OS GI

| FAN. | CNT 1<br>PATENT | NO.   |      |      | KIN  | D    | DATE |       |      | APPL | ICAT | ION  | NO.  |       | D   | ATE  |     |
|------|-----------------|-------|------|------|------|------|------|-------|------|------|------|------|------|-------|-----|------|-----|
|      |                 |       |      |      |      |      |      |       |      |      |      |      |      |       |     |      |     |
| PI   | WO 2008         | 30611 | 89   |      | A1   |      | 2008 | 0522  |      | WO 2 | 007- | JS84 | 831  |       | 2   | 0071 | 115 |
|      | W:              | ΑE,   | AG,  | AL,  | AM,  | AT,  | AU,  | AZ,   | BA,  | BB,  | BG,  | BH,  | BR,  | BW,   | BY, | BZ,  | CA, |
|      |                 | CH,   | CN,  | CO,  | CR,  | CU,  | CZ,  | DE,   | DK,  | DM,  | DO,  | DZ,  | EC,  | EE,   | EG, | ES,  | FI, |
|      |                 | GB,   | GD,  | GE,  | GH,  | GM,  | GT,  | HN,   | HR,  | HU,  | ID,  | IL,  | IN,  | IS,   | JP, | KE,  | KG, |
|      |                 | KM,   | KN,  | KP,  | KR,  | KZ,  | LA,  | LC,   | LK,  | LR,  | LS,  | LT,  | LU,  | LY,   | MA, | MD,  | ME, |
|      |                 | MG,   | MK,  | MN,  | MW,  | MX,  | MY,  | MZ,   | NA,  | NG,  | NI,  | NO,  | NZ,  | OM,   | PG, | PH,  | PL, |
|      |                 | PT,   | RO,  | RS,  | RU,  | SC,  | SD,  | SE,   | SG,  | SK,  | SL,  | SM,  | SV,  | SY,   | TJ, | TM,  | TN, |
|      |                 | TR,   | TT,  | TZ,  | UA,  | UG,  | US,  | UZ,   | VC,  | VN,  | ZA,  | ZM,  | ZW   |       |     |      |     |
|      | RW              | AT,   | BE,  | BG,  | CH,  | CY,  | CZ,  | DE,   | DK,  | EE,  | ES,  | FI,  | FR,  | GB,   | GR, | HU,  | IE, |
|      |                 | IS,   | IT,  | LT,  | LU,  | LV,  | MC,  | MT,   | NL,  | PL,  | PT,  | RO,  | SE,  | SI,   | SK, | TR,  | BF, |
|      |                 | ВJ,   | CF,  | CG,  | CI,  | CM,  | GA,  | GN,   | GQ,  | GW,  | ML,  | MR,  | NE,  | SN,   | TD, | TG,  | BW, |
|      |                 | GH,   | GM,  | KE,  | LS,  | MW,  | MZ,  | NA,   | SD,  | SL,  | SZ,  | TZ,  | UG,  | ZM,   | ZW, | AM,  | AZ, |
|      |                 | BY,   | KG,  | KZ,  | MD,  | RU,  | TJ,  | TM    |      |      |      |      |      |       |     |      |     |
|      | US 2008         | 30119 | 418  |      | A1   |      | 2008 | 0522  |      | US 2 | 007- | 9407 | 66   |       | 2   | 0071 | 115 |
|      | US 7622         | 2452  |      |      | B2   |      | 2009 | 1124  |      |      |      |      |      |       |     |      |     |
| RAI  | US 2006         | 5-859 | 440P |      | P    |      | 2006 | 1116  |      |      |      |      |      |       |     |      |     |
| SSI  | GNMENT I        | HISTO | RY F | OR U | S PA | TENT | AVA  | ILAB: | LE I | N LS | US D | ISPL | AY F | ORMA' | T   |      |     |
| S    | CASREAG         | CT 14 | 8:58 | 6081 | ; MA | RPAT | 148  | :586  | 081  |      |      |      |      |       |     |      |     |

- \* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT \*
- AB C-9 alkenylidine bridged macrolides I and II, wherein
  T is an (un)substituted alkylene, alkylketo, alkylimine, alkylester,
  alkylthioether bridge; A or B can be taken together with the
  carbon atom attached to be an (un)substituted alkene or alkylimine, or A
  or B is one or the other consisting of hydrogen and an (un)substituted
  ether; L can be alkyl, alkenyl, alkynyl, or heteroaryl groups; W can be
  hydrogen, L as stated above, ketones, esters or amides; Q can be hydrogen,
  aryl, cycloalkyl groups, or L as stated above; Z can be hydrogen, azido,
  cyano, nitro, amide, carboxy, aldehydo, esters, etc.; when U is hydrogen,
  V can be hydrogen, ethers, carbamates, sulfones, glycosyl or O linked

```
disaccharides; alternatively, U and V can be taken together to be an oxo
    group; X and Y are independently hydrogen, hydroxy, halo, or L stated
    above; G can be hydrogen, hydroxy, or an (un)substituted ether;
    alternatively, G and W can be a cyclic propylidene or cyclic carbamate are
    prepared Thus, III was prepared and employed as a C-9 alkenylidine
    bridged macrolide for use as prodrugs in antibiotic
    therapeutic agents (no data). Further I and II are versatile
    pharmaceutically acceptable salts, esters or prodrugs for treating
    bacterial infections such as cystic fibrosis.
RE.CNT 3
             THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
             ALL CITATIONS AVAILABLE IN THE RE FORMAT
L3
    ANSWER 9 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
AN
    2008:127976 CAPLUS <<LOGINID::20101109>>
DN
    148:192155
ΤI
    Preparation of erythromycin bridged carbamate
    macrolides as antibacterial agents
IN
    Kim, Heejin; Phan, Ly Tam; Or, Yat Sun
PA
    Enanta Pharmaceuticals, Inc., USA
SO
    PCT Int. Appl., 127 pp.
    CODEN: PIXXD2
DT
    Patent
LA
    English
FAN.CNT 1
                       KIND DATE
    PATENT NO.
                                          APPLICATION NO.
    WO 2008014221
                        ____
                        A2 20080131 WO 2007-US74157
A3 20081120
                       A2
PΤ
    WO 2008014221
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,
            CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI,
            GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG,
            KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
            MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL,
            PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,
            TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
        RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
            IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW,
            GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
            BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA
```

20080131 PRAI US 2006-832809P P 20060724 ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

A1

OS CASREACT 148:192155; MARPAT 148:192155 GI

US 20080027012

- \* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT \*
- Erythromycin bridged carbamate macrolides, e.g. I, wherein R is H, hydroxyl protecting group; R1 and R2 are independently selected from the group consisting of hydrogen, acyl, a substituted or unsubstituted, saturated or unsatd. aliphatic group, a substituted

or unsubstituted, saturated or unsatd. alicyclic group, a substituted or unsubstituted aromatic group, a substituted or unsubstituted heteroarom. group, saturated or unsatd. heterocyclic group; or can be taken together with the nitrogen atom to which they are attached to form a substituted or unsubstituted; A is R5; R5 is alkylene, alkenylene, alkynylene containing

US 2007-781985

20070724

hetero-atom selected from O, S, N; R5-X1-R6; X1 is carbonyl, substituted imine; R6 is independently selected from R5, substituted ester, substituted thio-ester, substituted alkylidene; X and Y are independently H, halogen, protected OH, O-acyl, alkoxy, substituted N; XY taken together with the carbon to which they are attached is CO, substituted oxy-imine; U and V are independently H, OH, protected OH, alkoxy, alkyl, alkenyl, alkynyl, acyl, ester, sulfonyl, sugar residue; R3 and R4 are independently H, halogen, alkyl, alkenyl, alkynyl, O-alkyl, O-alkenyl, O-alkynyl; Z is H, azido, cvano, nitro, aldehyde, COOH, CONH2; Q is H, protected OH, alkoxy, O-alkyl, O-alkenyl, O-alkynyl; L is alkyl, alkenyl, alkynyl; The present invention discloses compds. of formulas (I) and (II) or pharmaceutically acceptable salts, esters, or prodrugs thereof: which exhibit antibacterial properties. The present invention further relates to pharmaceutical compns. comprising the aforementioned compds. for administration to a subject in need of antibiotic treatment. The invention also relates to methods of treating a bacterial infection in a subject by administering a pharmaceutical composition comprising the compds. of the present invention. The invention further includes process by which to make the compds. of the present invention. Thus, glycoside II as prepared and tested as antibacterial agent. The invention further provides compns. and methods of treating patients suffering from an inflammatory condition comprising administering to a patient in need thereof, a therapeutically effective amount of at least one compound of the invention. Specific examples of inflammatory conditions treatable according to the invention include, but are not limited to scleritis; epi-scleritis; allergic conjunctivitis; pulmonary inflammatory diseases, particularly cystic fibrosis (CF), asthma, chronic obstructive pulmonary disease (COPD), allergic bronchopulmonary aspergillosis (ABPA), and sarcoidosis; procto-sigmoiditis; allergic rhinitis; arthritis; tendonitis; apthous stomatitis; and inflammatory bowel disease.

- L3 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2007:1155907 CAPLUS <<LOGINID::20101109>>
- DN 149:332535
- TI Synthesis of 9-(acetylimino)-3-0-de(2,6-dideoxy-3-C-methyl-3-0-methyl- $\alpha$ -1-ribo-hexopyranoxyl)-9-deoxo-6,11-0-(1,3-propanediyl) erythromycin 2'-acetate
- AU Liang, Qun; Chen, Shiqing; Chen, Jiren
- CS Hubei Biocause Pharmaceutical Co., Ltd., Jingmen, Hubei Province, 448000, Peop. Rep. China
- SO Jingxi Huagong Zhongjianti (2006), 36(2), 21-23
- CODEN: JHZIAR; ISSN: 1009-9212 PB Jingxi Huagong Zhongjianti Zazhishe
- DT Journal
- LA Chinese
- OS CASREACT 149:332535
- ÅB A bridged imine acetamide (erythromycin derivative) was synthesized via several synthetic steps, such as acetylation, bridge formation, reduction, etc., using erythromycin A oxime as the starting material. The total yield of the product was 28%. The above-mentioned bridged imine acetamide was used to produce a new type of antibiotic derivs. via the removal of a cladinose sugar residue from said from macrolide and joining the 6 and II position on the macrolide aring. The target compound could overcome drug tolerance and had enhanced antibacterial activity (no data).
- L3 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2007:1121499 CAPLUS <<LOGINID::20101109>>
- DN 147:427649
- TI Preparation of 3,6-bridged 9,12-oxolide erythromycin analogs as antibacterial agents

- IN Or, Yat Sun; Niu, Degiang; Wang, Zhe
- PA Emata Pharmaceuticals, Inc, USA SO U.S. Pat. Appl. Publ., 76 pp.
- CODEN: USXXCO
- DT Patent LA English
- FAN.CNT 1

| P.F   | ATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|-------|-------------|------|----------|-----------------|----------|
|       |             |      |          |                 |          |
| PI US | 20070232554 | A1   | 20071004 | US 2006-435401  | 20060516 |
| US    | 7407942     | B2   | 20080805 |                 |          |
|       |             |      |          |                 |          |

PRAI US 2006-786867P P 20060329

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS CASREACT 147:427649; MARPAT 147:427649

GI

- \* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT \*
- The present invention discloses the preparation of 3,6-bridged 9,12-oxolide erythromycin analogs I, wherein R1 is H, D, Me, allyl, CH2OH, aryl, alkyl, alkenyl, alkynyl; R2 is H, OH; when R1 is H, R2 is H, OH, N3, NH2, CN, heterocycle, AR3; A is O, OCOO, S, SO, SO2, NH, NMe, NHCO, CHCOO, NHCONH, NHSO2; R3 is H, aryl, heteroaryl, alkyl, alkenyl, alkynyl; X and Y are independently H, OH, N3, NH2, CN, heterocycle, AR3; XY together with the carbon which they are attached form CO, substituted oxime; B is substituted N; V is H, azido, cyano, nitro, aldehyde, carboxylic acid, amide, aliphatic; Q is H, protected OH, OH, O-aryl, O-alkyl, O-alkynyl, O-alkenyl, O-cycloalkyl; L is Et, CH(OH)Me, alkyl, alkenyl, alkynyl; Rx is H, hydroxy protecting group; or pharmaceutically acceptable salts, esters, or prodrugs which exhibit antibacterial properties. The present invention further relates to pharmaceutical compns. comprising the aforementioned compds. for administration to a subject in need of antibiotic treatment. The invention also relates to methods of treating a bacterial infection in a subject by administering a pharmaceutical composition comprising the compds. of the present invention. The invention further includes process by which to make the compds. of the present invention. Thus, erythromycin analog II was prepared and tested in vitro as antibacterial agent. The compds. of the invention generally demonstrated an MIC in the range from about 64 ug/mL to about 0.03 ug/mL. According to the methods of treatment of the present invention, bacterial infections, cystic fibrosis and inflammatory conditions are treated or prevented in a patient such as a human or another animal by administering to the patient a therapeutically effective amount of a compound of the invention, in such amts. and for such time as is necessary to achieve the desired result.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L3 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2007:409633 CAPLUS <<LOGINID::20101109>>
- DN 146:380246
- T Preparation of erythromycin analogs 6,11-bridged tricyclic macrolides as antibacterial agents
- IN Or, Yat Sun; Wang, Guoqiang; Liu, Tongzhu; Phan, Ly Tam
- PA Enanta Pharmaceuticals, Inc., USA
- SO U.S. Pat. Appl. Publ., 45 pp.
- CODEN: USXXCO
- DT Patent

LA English

| FAN. |     | TENT I               |      |     |     | KIN      |     | DATE                 |      |     | APPL | ICAT | ION I | NO. |     | D   | ATE        |     |
|------|-----|----------------------|------|-----|-----|----------|-----|----------------------|------|-----|------|------|-------|-----|-----|-----|------------|-----|
| PI   |     | 2007                 | 0082 |     |     | A1<br>B2 |     | 2007                 |      |     | US 2 | 006- | 5452  | 41  |     | 2   | 0061       | 010 |
|      | WO  | 7589<br>2007<br>2007 | 0449 |     |     | A2       |     | 2009<br>2007<br>2007 | 0419 |     | WO 2 | 006- | US40: | 243 |     | 2   | 0061       | 012 |
|      | *** |                      | ΑE,  | AG, | AL, | AM,      | AT, | AU,                  | AZ,  |     |      |      |       |     |     |     | CA,<br>GB, |     |
|      |     |                      | KR,  | KZ, | LA, | LC,      | LK, | LR,                  | LS,  | LT, | LU,  | LV,  | LY,   | MA, | MD, | MG, | KN,<br>MK, | MN, |
|      |     |                      | RU,  | SC, | SD, | SE,      | SG, |                      | SL,  | SM, | SV,  |      |       |     |     |     | RO,<br>TT, |     |
|      |     | RW:                  | ΑT,  | BE, | BG, | CH,      | CY, | CZ,                  | DE,  | DK, | EE,  |      |       |     |     |     | HU,<br>BF, |     |
|      |     |                      | CF,  | CG, | CI, | CM,      | GA, | GN,                  | GQ,  | GW, | ML,  | MR,  | NE,   | SN, | TD, | TG, | BW,<br>AZ, | GH, |
| PRAI | US  | 2005                 |      |     |     |          |     | TM,<br>2005          |      | EA, | EP,  | OA   |       |     |     |     |            |     |
|      |     | 2006                 |      |     |     |          |     | 2006                 |      |     |      |      |       |     |     | _   |            |     |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT OS CASREACT 146:380246; MARPAT 146:380246

GI

AB Erythromycin analogs 6,11-bridged tricyclic macrolides I, wherein R is hydrogen, hydroxy protecting group or hydroxy prodrug group; R1 and R2 are independently R3; R1 and R2 can be taken together with the nitrogen atom to which they are attached to form a substituted or unsubstituted heterocyclic ring; A is -J-R3, where J is absent or is selected from the group consisting of: 0, OC(0), C(0), S(0)n, NH, NH(CO), NH(CO)NH, or NHS(O)n where n = 0-2 and R3 is absent or is a substituted or unsubstituted alkylene, alkenylene or alkynylene optionally containing one or more heteroatoms selected from O, S or N; L is : Et, CH(OH)CH3, alkyl, alkenyl, alkynyl; Q is H, protected hydroxyl, OH, O-arvl, O-cycloalkyl; U and V are independently H, OH, acyl, ester, sulfonyl, sugar residue; W is OH, substituted amine, alkoxy; Z is n3, CN, NO2, CONH2, COOH, CHO, R3, ester, substituted acyl. amide; X and Y are independently H, halogen, R3; were prepared as antibacterial agents. The present invention further relates to pharmaceutical compns. comprising the aforementioned compds. for administration to a subject in need of antibiotic treatment. The invention also relates to methods of treating a bacterial infection in a subject by administering a pharmaceutical composition comprising the compds. of the present invention. The invention further includes process by which to make the compds. of the present invention. Thus, title II was prepared and tested as antibacterial agent. According to the methods of treatment of the present invention, bacterial infections, cystic fibrosis and inflammatory conditions are treated or prevented in a patient such as a human or another animal by administering to the patient a therapeutically effective amount of a compound of the invention, in such amts. and for such time as is necessary to achieve the desired result.

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS) RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

<sup>\*</sup> STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- 1.3 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- 2007:325759 CAPLUS <<LOGINID::20101109>> AN DN 146:481941
- TI Azalides from azithromycin to new azalide derivatives
- AU Mutak, Stjepan
- CS Medicinal Chemistry and Chemical Process Development, PLIVA Research
- Institute, Zagreb, 10090, Croatia SO
- Journal of Antibiotics (2007), 60(2), 85-122 CODEN: JANTAJ; ISSN: 0021-8820
- PB Japan Antibiotics Research Association
- DT Journal; General Review
- LA English
- AB A review. Azalides are semi-synthetic macrolides, in which a nitrogen atom is introduced into a macrolactone ring via a Beckmann

rearrangement. Starting from erythromycin, oximes, depending on the reaction conditions lactams, or bicyclic-imino-ethers were formed, which were further reduced to aminolactones. The cyclic amine 9a- became the precursor for novel, significantly more active derivs., especially for 9-dihydro-9-deoxo-9a-methyl-9a-aza-9a-homoerythromycin A with the generic name azithromycin. It showed a broad spectrum of antibacterial activity covering all significant bacteria causing respiratory tract infections. The greatest advantages of azithromycin are its unusual pharmacokinetics (high tissue distribution), metabolic stability and high tolerability. These properties have led in recent years to the widespread use of the azalide scaffold for the synthesis of new compds. with advantageous pharmacokinetics. The azalide scaffold possesses an amino and several hydroxyl groups, which could be substituted or transformed to obtain new compds. Different derivs. were obtained by substitution on the nitrogen but a large variety of derivs., such as ethers, esters and carbamates, were made by reactions with various hydroxyl groups. Substitutions on both nitrogen and hydroxyl or two hydroxyl groups yielded new, bridged compds. The 4''-hydroxy group was oxidized to 4-oxo-, which was transformed via the oxime to 4-amino, or via epoxide to 4" -methylamino compds. Cleavage of the cladinose sugar and further transformations gave 3-acyl or 3-oxo compds., which were less active than 14-membered acylides or ketolides. Beckmann rearrangement of some

16-membered macrolide oximes yielded only 17-membered lactams, which were less active than starting macrolides, and could not be reduced to amines. Intramol. rearrangement of azalide imino-ethers vielded 13-membered azalides. Some new 11a-azalides were obtained after oxidative cleavage of some 16-membered macrolides and addnl. cyclisation.

OSC.G 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS) RE.CNT 121 THERE ARE 121 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- 1.3 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2006:1177354 CAPLUS <<LOGINID::20101109>>
- DN 145:489502
- Preparation of 6-11 bridged oxime erythromycin
- derivatives for use as antibacterial and antibiotic prodrugs
- IN Wang, Guoqiang; Phan, Ly Tam; Or, Yat Sun; Qiu, Yao-Ling; Niu, Deqiang; Peng, Yulin; Busuvek, Marina; Wang, Yanchun; Nakajima, Suanne
- PA Enanta Pharmaceuticals, Inc., USA
- SO PCT Int. Appl., 67 pp.
- CODEN: PIXXD2
- Patent DT
- LA English FAN.CNT 1
  - PATENT NO. KIND DATE APPLICATION NO. DATE

| PI        |    | 200611931                                      |            |     |   |      |      |      | WO 2   | 2006-          | US16  | 882  |        | 2   | 0060  | 502 |
|-----------|----|--|------------|-----|---|------|------|------|--------|----------------|-------|------|--------|-----|-------|-----|
|           | WO | 200611931<br>W: AE.                            | З<br>AG, A |     |   |      |      |      | DD     | D.C.           | DD    | DIZ  | DV     | DØ. | 0.3   | CII |
|           |    |  | CO, C      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | GH. G      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | LC, L      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | NA. N      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | SK. S      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | YU, Z      |     |   | 10,  | ,    | 1117 |        |                | ,     | 011, | 00,    | 00, | 02,   | ,   |
|           |    | RW: AT.  |            |     |   | CZ.  | DE.  | DK.  | EE.    | ES.            | FI.   | FR.  | GB.    | GR. | HU.   | IE. |
|           |    |  | IT, L      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | CG, C      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | KE, L      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           |    |  | KZ, M      |     |   |      |      |      |        |                |       |      |        |     |       |     |
|           | US | 200602527                                      | 10         | A   | 1 | 2006 | 1109 |      | US 2   | 2005-          | 1222  | 51   |        | 2   | 0050  | 504 |
|           | AU | 200624218                                      | 8          | P   | 1 | 2006 | 1109 |      | AU 2   | 2006-          | 2421  | 88   |        | 2   | 0060  | 502 |
|           |    |  |            |     |   |      |      |      |        |                |       |      |        |     | 0060  | 502 |
|           | EP | 1885737  |            | A   | 2 | 2008 | 0213 |      | EP 2   | 2006-          | 7699  | 71   |        | 2   | 0060  | 502 |
|           |    | R: AT,   |            |     |   |      |      |      |        |                |       |      |        |     |       | IE, |
|           |    |  | IT, L      |     |   | LV,  | MC,  | NL,  | PL,    | PT,            | RO,   | SE,  | SI,    | SK, | TR    |     |
|           | JP | 200854043                                      | 2          | Т   |   | 2008 | 1120 |      | JP 2   | 2008-<br>2006- | 5101  | 45   |        | 2   | 0060  | 502 |
|           | BR | 200601047                                      | 7          | A   | 2 | 2010 | 0622 |      | BR 2   | 2006-          | 1047  | 7    |        | 2   | 0060. | 502 |
|           | US | 200602527                                      | 12         | A   | 1 | 2006 | 1109 |      | US 2   | 2006-          | 4166  | 09   |        | 2   | 0060  | 503 |
|           | US | 200601047<br>200602527<br>7384922<br>2007DN079 |            | E   | 2 | 2008 | 0610 |      |        |                |       |      |        |     |       |     |
|           | IN | 2007DN079                                      | 61         | A   |   | 2007 | 1109 |      | IN 2   | 2007-          | DN 79 | 61   |        | 2   | 0071  | 016 |
|           | CN | 101166749                                      |            | Ρ.  |   | 2008 | 0423 |      |        | 2006-          |       |      |        |     |       |     |
|           |    | 200701373                                      |            |     |   | 2008 |      |      |        | 2007-          |       |      |        |     |       |     |
|           |    | 200802622                                      |            |     |   |      |      |      |        | 2008-          |       |      |        |     |       |     |
|           |    | 201000416                                      |            |     |   |      |      |      | US 2   | 2009-          | 5431  | 55   |        | 2   | 0090  | 818 |
| PRAI      |    | 2005-1222                                      |            |     |   | 2005 |      |      |        |                |       |      |        |     |       |     |
|           |    | 2005-6776                                      |            | E W |   | 2005 |      |      |        |                |       |      |        |     |       |     |
|           |    | 2006-US16<br>2006-4166                         |            |     |   | 2006 |      |      |        |                |       |      |        |     |       |     |
|           |    | 2006-4166                                      |            |     |   | 2006 |      |      |        |                |       |      |        |     |       |     |
| A C C T ( |    | 2008-1238<br>ENT HISTOR                        |            |     |   |      |      | т т  | NT T C | otte n         | TODI  | NV E | ADM7   | r   |       |     |
|           |    | INI HISIOR                                     |            |     |   |      |      |      |        | ous D          | TOPL  | HI E | JRIMA. | T   |       |     |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT OS CASREACT 145:489502; MARPAT 145:489502

```
AB 6-11 Bridged oxime erythromycin derivs. such as I are
    prepared as antibacterial and antibiotic prodrugs. Further, I was prepared
     and tested against various gram neg. bacterial such as S. aureus, S.
    pneumoniae and S. pyogenes ( MIC between 0.06 and 4 µg/mL.). Title
    compds. can also be used in the treatment of cystic fibrosis,
     inflammation, or in combination therapy as antibacterial agents.
OSC.G 2
             THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
RE.CNT 1
             THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
```

ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 15 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN AN

2006:845175 CAPLUS <<LOGINID::20101109>>

DN 145:271996

ΤI Process for the deoximation of erythromycin oximes to 6-11 bridged bicyclic ketolides

IN Heggelund, Audun

PA Alpharma Aps, Den.

PCT Int. Appl., 22pp. SO

CODEN: PIXXD2

DT Patent

LA English FAN.CNT 1

GI

|      | PATENT  | NO.    |         | KIN                    | D    | DATE |        |     | APPL  | ICAT: | I NOI | NO.  |     | D.  | ATE   |     |
|------|---------|--------|---------|------------------------|------|------|--------|-----|-------|-------|-------|------|-----|-----|-------|-----|
|      |         |        |         |                        | _    |      |        |     |       |       |       |      |     |     |       |     |
| PI   | WO 2006 | 08723  | 8       | A1                     |      | 2006 | 0824   |     | WO 2  | 006-1 | EP16  | 73   |     | 2   | 0060  | 221 |
|      | WO 2006 | 08723  | 8       | A9                     |      | 2006 | 1005   |     |       |       |       |      |     |     |       |     |
|      | W:      | ΑE,    | AG, AL  | AM,                    | AT,  | AU,  | AZ,    | BA, | BB,   | BG,   | BR,   | BW,  | BY, | BZ, | CA,   | CH, |
|      |         | CN,    | CO, CR  | CU,                    | CZ,  | DE,  | DK,    | DM, | DZ,   | EC,   | EE,   | EG,  | ES, | FI, | GB,   | GD, |
|      |         | GE.    | GH, GM  | HR.                    | HU.  | ID.  | IL.    | IN. | IS.   | JP.   | KE.   | KG.  | KM. | KN. | KP.   | KR. |
|      |         |        | LC, LK  |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | NA, NG  |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | SK, SL  |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | YU, ZA  |                        |      | ,    | ,      | ,   | ,     | ,     | ,     | ,    | ,   | ,   | ,     | ,   |
|      | RW:     | AT,    | BE, BG  | CH,                    | CY,  | CZ,  | DE,    | DK, | EE,   | ES,   | FI,   | FR,  | GB, | GR, | HU,   | IE, |
|      |         | IS.    | IT, LT  | LU.                    | LV.  | MC.  | NL.    | PL. | PT.   | RO.   | SE.   | SI.  | SK. | TR. | BF.   | BJ. |
|      |         |        | CG, CI  |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | KE, LS  |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | KZ, MD  |                        |      |      | ,      | ,   | ,     | ,     | ,     | ,    | ,   | ,   | ,     | ,   |
|      | AU 2006 |        |         |                        |      |      | 0824   |     | AII 2 | 006-  | 2157  | 09   |     | 21  | 0060  | 221 |
|      | CA 2598 |        |         |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      | EP 1856 |        |         |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | BE, BG  |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      |         |        | IT, LI  |                        |      |      |        |     |       |       |       |      |     |     |       | ,   |
|      | JP 2008 |        |         |                        |      |      |        |     |       |       |       |      |     |     |       | 221 |
|      |         |        |         |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      | CN 1011 |        |         |                        |      |      |        |     | CN Z  | 006-  | 8000  | 5568 |     | 2   | 00 /0 | 321 |
| PRAI |         |        |         |                        |      |      |        |     |       |       |       |      |     |     |       |     |
|      | WO 2006 |        |         |                        |      |      |        |     |       |       |       |      |     |     |       |     |
| Λe   | CACDEAC | ጥ 1/15 | · 27100 | <ul> <li>MA</li> </ul> | רגסס | 1/15 | . 2719 | aac |       |       |       |      |     |     |       |     |

CASREACT 145:271996; MARPAT 145:271996

AB A process such that 6-11 bridged bicyclic ketolide or erythromycin oximes I, wherein Z is H, acvl, alkanovl or acetvl; R1 and R2 independently is H. alkyl, or taken together as =CH2 or alkylidene; R3-R5 and R7 independently are H or alkyl; R6 is OH, glycosyl, or taken together with R7 is =0 are converted to 6-11 bridged bicyclic ketolides or erythromycins comprises reacting a 6-11 bridged macrolide with a deoximating agent, preferably an oxidative deoximating agent such as Dess-Martin periodinane is presented. The procedure may comprise deoximation of certain erythromycin A C-9 oxime derivs. with regeneration of the C-9 keto function. Thus, II (R1 and R2 are taken as =CH2, R3 is OH, R4 is Et, R5 is H, R6 and R7 are =0 and Z is Ac) was prepd using 2-Iodoxybenzoic acid or Dess-Martin periodinane as the deoximating agent.

Ι

OSC.G THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS) RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L3 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- ΑN 2005:962271 CAPLUS <<LOGINID::20101109>>
- DN 143:230147
  - Preparation of bridged macrocyclic erythromycin and azithromycin compounds via palladium-catalyzed alkylation and cyclization reactions
- PA Enanta Pharmaceuticals, Inc., USA
- Or, Yat Sun SO PCT Int. Appl., 42 pp.
- CODEN: PIXXD2
- DТ Patent

IN

- LA English
- FAN CNT 1

| E MIN. | CIVI     |      |     |     |     |     |      |      |     |      |      |      |     |     |     |      |     |
|--------|----------|------|-----|-----|-----|-----|------|------|-----|------|------|------|-----|-----|-----|------|-----|
|        | PATENT : | NO.  |     |     | KIN | D   | DATE |      | - 2 | APPL | ICAT | ION  | NO. |     | D)  | ATE  |     |
|        |          |      |     |     |     | -   |      |      |     |      |      |      |     |     |     |      |     |
| PI     | WO 2005  | 0804 | 08  |     | A1  |     | 2005 | 0901 | 1   | WO 2 | 004- | US19 | 07  |     | 2   | 0040 | 123 |
|        | W:       | ΑE,  | AG, | AL, | AM, | AT, | AU,  | AZ,  | BA, | BB,  | BG,  | BR,  | BW, | BY, | BZ, | CA,  | CH, |
|        |          | CN,  | CO, | CR, | CU, | CZ, | DE,  | DK,  | DM, | DZ,  | EC,  | EE,  | EG, | ES, | FI, | GB,  | GD, |
|        |          | GE,  | GH, | GM, | HR, | HU, | ID,  | IL,  | IN, | IS,  | JP,  | KE,  | KG, | KP, | KR, | KZ,  | LC, |
|        |          | LK,  | LR, | LS, | LT, | LU, | LV,  | MA,  | MD, | MG,  | MK,  | MN,  | MW, | MX, | MZ, | NA,  | NI, |
|        |          | NO,  | NZ, | OM, | PG, | PH, | PL,  | PT,  | RO, | RU,  | SC,  | SD,  | SE, | SG, | SK, | SL,  | SY, |
|        |          | ΤJ,  | TM, | TN, | TR, | TT, | TZ,  | UA,  | UG, | US,  | UZ,  | VC,  | VN, | YU, | ZA, | ZM,  | ZW  |
|        | RW:      | BW,  | GH, | GM, | KE, | LS, | MW,  | MZ,  | SD, | SL,  | SZ,  | TZ,  | UG, | ZM, | ZW, | AM,  | ΑZ, |
|        |          | BY,  | KG, | KZ, | MD, | RU, | TJ,  | TM,  | AT, | BE,  | BG,  | CH,  | CY, | CZ, | DE, | DK,  | EE, |
|        |          | ES,  | FΙ, | FR, | GB, | GR, | HU,  | IE,  | IT, | LU,  | MC,  | NL,  | PT, | RO, | SE, | SI,  | SK, |

TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

OS CASREACT 143:230147; MARPAT 143:230147

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Bridged macrocyclic erythromycin and azithromycin compds. I, wherein L is H, aliphatic, alicyclic, aromatic, heteroarom., heterocyclic; U or V is sugar residue; U and V taken together with the carbon atom to which they are attached form CO, alkylidene; R is H, acyl, silane, hydroxy protecting group; X and Y taken together with the carbon atom to which they are attached form CO, imine, oxime; X1 is H, halogen; were prepared via palladium-catalyzed alkylation and cyclization reactions. Thus, macrolide azithromycin II was prepared via

palladium-catalyzed alkylation and cyclization reactions.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:714462 CAPLUS <<LOGINID::20101109>>

DN 144:412784

- TI 3-0-acyl derivatives of bridged-15-membered azalides: Synthesis, structural determination and antibacterial activity
- AU Fajdetic, Andrea; Kobrehel, Gabrijela; Lazarevski, Gorjana; Stimac, Vlado; Mutak, Stjepan
- CS PLIVA Research Institute, Ltd., Zagreb, 10000, Croatia
- SO Croatica Chemica Acta (2005), 78(2), 301-312
- CODEN: CCACAA; ISSN: 0011-1643
- PB Croatian Chemical Society DT Journal
- DT Journal LA English
- OS CASREACT 144:412784
- OS CASKEACT 144.412.784

  The synthesis, structural determination and biol. evaluation of 15-membered azalides acylated at the C-3 position are described.

  3-Descladinosyl-9a,11-cyclic carbamate of the 9a-aza-9a-homoerythromycin A and their 12-O-alkyl derivs. were synthesized via acidic hydrolysis of adequate 3-cladinosyl analogs. Protections of 2'-hydroxyl group were performed to furnish starting compds. for acylation of the C-3-hydroxyl group. After deprotection various 3-O-acyl derivs. were obtained and their structures confirmed by spectroscopic methods (IR, MS, NMR). The new compds. were evaluated in vitro against a panel of Gram-pos. and Gram-neg, bacteria and their activities compared with those of parent derivs. The 3-O-acyl derivs. exhibited improved antibacterial activity, but it was lower than by standard macrolides.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L3 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2005:304995 CAPLUS <<LOGINID::20101109>>
- DN 143:282411
- TI First description of Curtobacterium spp. isolated from human clinical specimens
- AU Funke, Guido; Aravena-Roman, Max; Frodl, Reinhard
- CS Department of Medical Microbiology and Hygiene, Gaertner & Colleagues Laboratories, Weingarten, Germany
- SO Journal of Clinical Microbiology (2005), 43(3), 1032-1036 CODEN: JCMIDW; ISSN: 0095-1137

- PB American Society for Microbiology
- DT Journal
- LA English
- AB During a 4-vr period, five strains (three of which were doubtless clin. significant) of yellow- or orange-pigmented, oxidative, slowly acid-producing coryneform bacteria were recovered from human clin. specimens in two reference labs. or referred to them. The strains were motile, catalase pos., nitrate reductase neg., and urease neg., but strongly hydrolyzed esculin. In all reference and clin. strains described in the present study, anteisopentadecanoic (C15:0ai) and anteisoheptadecanoic (C17:0ai) acids represented more than 75% of all cellular fatty acids except in one clin. strain and in Curtobacterium pusillum, in which both the unusual o-cyclohexyl fatty acid (identified as C18:107cis/o9cis/o12trans by the Sherlock system) represented more than 50% of all cellular fatty acids. In all clin. strains, ornithine was the diamino acid of the cell wall, the interpeptide bridge consisted of ornithine, and acetyl was the acyl type of the peptidoglycan. Therefore, the five clin. strains were unambiguously identified as Curtobacterium spp. Analyses of the complete 16S rRNA genes of the five clin. strains with homologies to the established Curtobacterium species ranging from 99.2 to 100% confirmed the identifications as Curtobacterium spp. Data on the antimicrobial susceptibility pattern of curtobacteria are reported, with macrolides and rifampin showing very low MICs for all strains tested. This report is the first on the isolation of Curtobacterium strains from human clin. specimens.
- OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
  RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
  ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L3 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2005:38025 CAPLUS <<LOGINID::20101109>>
- DN 142:253741
- TI Binding site of the bridged macrolides in the
- Escherichia coli ribosome AU Xiong, Liqun; Korkhin, Yakov; Mankin, Alexander S.
- CS Center for Pharmaceutical Biotechnology, University of Illinois, Chicago, IL. USA
- SO Antimicrobial Agents and Chemotherapy (2005), 49(1), 281-288 CODEN: AMACCQ; ISSN: 0066-4804
- PB American Society for Microbiology
- DT Journal
- LA English
- AB Ketolides represent the latest group of macrolide antibiotics. Tight binding of ketolides to the ribosome appears to correlate with the presence of an extended alkyl-aryl side chain. Recently developed 6,11bridged bicyclic ketolides extend the spectrum of platforms used to generate new potent macrolides with extended alkyl-aryl side chains. The purpose of the present study was to characterize the site of binding and the action of bridged macrolides in the ribosomes of Escherichia coli. All the bridged macrolides investigated efficiently protected A2058 and A2059 in domain V of 23S rRNA from modification by di-Me sulfate and U2609 from modification by carbodismide. In addition, bridged macrolides that carry extended alkyl-aryl side chains protruding from the 6,11 bridge protected A752 in helix 35 of domain II of 23S rRNA from modification by di-Me sulfate. Bridged macrolides efficiently displaced erythromycin from the ribosome in a competition binding assay. The A2058G mutation in 23S rRNA conferred resistance to the bridged macrolides. The U2609C mutation, which renders E. coli resistant to the previously studied

ketolides telithromycin and cethromycin, barely affected cell

susceptibility to the bridged macrolides used in this study. The results of the biochem. and genetic studies indicate that in the E. coli ribosome, bridged macrolides bind in the nascent peptide exit tunnel at the site previously described for other macrolide antibiotics. The presence of the side chain promotes the formation of specific interactions with the helix 35 of 23S rRNA.

THERE ARE 27 CAPLUS RECORDS THAT CITE THIS RECORD (28 CITINGS) OSC.G 27 RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- ANSWER 20 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN L3
- AN 2004:890622 CAPLUS << LOGINID::20101109>>
- DN 142:56597
- ΤI Synthesis of Novel 6,11-0-Bridged Bicyclic Ketolides via a
- Palladium-Catalyzed Bis-allylation
- Wang, Guoqiang; Niu, Deqiang; Qiu, Yao-Ling; Phan, Ly Tam; Chen, Zhigang; ΑU Polemeropoulos, Alexander; Or, Yat Sun
- Enanta Pharmaceuticals, Inc., Watertown, MA, 02472, USA
- SO Organic Letters (2004), 6(24), 4455-4458 CODEN: ORLEF7; ISSN: 1523-7060
- PB American Chemical Society
- DT Journal
- English LA
- CASREACT 142:56597 OS
- AB A bridging chemical process was developed to form an ether bridge between 6-0 and 11-0 of erythromycin A via a tandem or stepwise palladium-catalyzed bis- $\pi$ -allylation. By applying this bridging process, new 6,11-0-bridged bicyclic ketolides (BBKs) were synthesized. These BBKs showed good antibacterial activities against the macrolide-susceptible strains as well as mef-resistant strains and served as a good core for further modifications to study the structure-activity relationship (SAR) and to overcome bacterial resistance.
- OSC.G 24 THERE ARE 24 CAPLUS RECORDS THAT CITE THIS RECORD (24 CITINGS) RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L3 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2004:101000 CAPLUS <<LOGINID::20101109>>
- DN 140:146397
- Preparation of 6,11-4-carbon bridged macrolide
- ketolides erythromycin analogs as antibacterial agents
- IN Or, Yat Sun; Wang, Guogiang; Niu, Degiang; Phan, Ly Tam

KIND DATE

- PA Enanta Pharmaceuticals, Inc., USA PCT Int. Appl., 80 pp.
- SO
- CODEN: PIXXD2
- Patent DT
- LA Enalish
- FAN.CNT 10 PATENT NO

|    | E AL | DIAT 1 |      |     |     | 17.7.14 |     | DATE |      |     | WE E P | TCMI | TOIA I | 140. |     | D1  | WIT. |     |
|----|------|--------|------|-----|-----|---------|-----|------|------|-----|--------|------|--------|------|-----|-----|------|-----|
|    |      |        |      |     |     |         | -   |      |      |     |        |      |        |      |     |     |      |     |
| PI | WO   | 2004   | 0110 | 09  |     | A1      |     | 2004 | 0205 |     | WO 2   | 003- | US20:  | 860  |     | 2   | 0030 | 701 |
|    |      | W:     | ΑE,  | AG, | AL, | AM,     | AT, | AU,  | AZ,  | BA, | BB,    | BG,  | BR,    | BY,  | BZ, | CA, | CH,  | CN, |
|    |      |        | CO,  | CR, | CU, | CZ,     | DE, | DK,  | DM,  | DZ, | EC,    | EE,  | ES,    | FI,  | GB, | GD, | GE,  | GH, |
|    |      |        | GM,  | HR, | HU, | ID,     | IL, | IN,  | IS,  | JP, | KE,    | KG,  | KP,    | KR,  | ΚZ, | LC, | LK,  | LR, |
|    |      |        | LS,  | LT, | LU, | LV,     | MA, | MD,  | MG,  | MK, | MN,    | MW,  | MX,    | MZ,  | NO, | NZ, | OM,  | PH, |
|    |      |        | PL,  | PT, | RO, | RU,     | SC, | SD,  | SE,  | SG, | SK,    | SL,  | ΤJ,    | TM,  | TN, | TR, | TT,  | TZ, |
|    |      |        | UA,  | UG, | UZ, | VC,     | VN, | YU,  | ZA,  | ZM, | ZW     |      |        |      |     |     |      |     |
|    |      | RW:    | GH,  | GM, | KE, | LS,     | MW, | MZ,  | SD,  | SL, | SZ,    | TZ,  | UG,    | ZM,  | ZW, | AM, | AZ,  | BY, |
|    |      |        | KG,  | KZ, | MD, | RU,     | ΤJ, | TM,  | AT,  | BE, | BG,    | CH,  | CY,    | CZ,  | DE, | DK, | EE,  | ES, |
|    |      |        | FΙ,  | FR, | GB, | GR,     | HU, | IE,  | IT,  | LU, | MC,    | NL,  | PT,    | RO,  | SE, | SI, | SK,  | TR, |

APPLICATION NO

DATE

|      |      |       | BF,   | ВJ,  | CF,   | CG, C | Ι, ( | CM,  | GA,   | GN,  | GQ | , GV | , M    | L, M | R, N | Ε, S | N, | TD,  | TG  |
|------|------|-------|-------|------|-------|-------|------|------|-------|------|----|------|--------|------|------|------|----|------|-----|
|      | US   | 67533 | 318   |      |       | В1    | 2    | 0040 | 0622  | Ţ    | S  | 2002 | -20    | 5357 |      |      | 20 | 020  | 725 |
|      | AU   | 20032 | 24770 | 06   |       | A1    | 2    | 0040 | 0216  | 7    | U  | 2003 | -24    | 7706 |      |      | 20 | 0030 | 701 |
|      | CN   | 1910: | 171   |      |       | A     | 2    | 0070 | 0207  | (    | N  | 2004 | -80    | 0401 | 52   |      | 20 | 040  | 114 |
|      | US   | 20050 | 0009  | 763  |       | A1    | 2    | 0050 | 0113  | Ţ    | IS | 2004 | 1 - 84 | 1249 |      |      | 20 | 040  | 507 |
|      | IN   | 20061 | DN03. | 703  |       | A     | 2    | 0070 | 0713  | 3    | N  | 200€ | -DN    | 3703 |      |      | 20 | 060  | 628 |
|      | IN   | 23563 | 36    |      |       | A1    | 2    | 0090 | 0731  |      |    |      |        |      |      |      |    |      |     |
|      | IN   | 20091 | DN020 | 067  |       | A     | 2    | 0090 | 0515  | ]    | N  | 2009 | -DN    | 2067 |      |      | 20 | 090  | 327 |
| PRAI | US   | 2002- | -2053 | 357  |       | A     | 2    | 0020 | 0725  |      |    |      |        |      |      |      |    |      |     |
|      | WO   | 2003- | -US20 | 0860 |       | W     | 2    | 0030 | 0701  |      |    |      |        |      |      |      |    |      |     |
|      | WO   | 2004- | -US99 | 98   |       | W     | 2    | 0040 | 0114  |      |    |      |        |      |      |      |    |      |     |
|      | IN   | 2006- | -DN3  | 703  |       | A3    | 2    | 0060 | 0628  |      |    |      |        |      |      |      |    |      |     |
| ASSI | SNME | ENT H | ISTO  | RY F | OR US | PATE  | NT A | AVA: | ILABL | E IN | L  | SUS  | DIS    | PLAY | FOR  | MAT  |    |      |     |
| OS   | CAS  | REAC: | r 140 | 0:14 | 6397; | MARP. | AT : | 140: | :1463 | 97   |    |      |        |      |      |      |    |      |     |

I

AB Novel 6,11-4-carbon bridged erythromycin ketolides I, wherein W is substituted alkylidene, X and Y are independently H, deuterium, OH, alkoxy, amine; XY are together CO, imine, oxime, amide; L is hydroxy-alkyl, alkyl, alkenyl, alkynyl; Z is H, Me, halogen; Rx is hydroxy protecting group; K is H, alkoxy, ester, carbamate, sulfoxide, sugar residue; pharmaceutically-acceptable compns. comprising a therapeutically effective amount of a compound of the invention in combination with a pharmaceutically-acceptable carrier are described. Also described are methods for treating bacterial infections by administering to an animal a pharmaceutical composition containing a therapeutically effective amount of

a compound of the invention and processes for the preparation of such compds. Thus, I (W is -CH2CH=CHCH2-, X and Y taken together with the carbon atom they are attached to form C=N-OH, L is Et, Rx = H; K is sugar residue Q) was prepared and tested in vitro as antibacterial agent. The compds. of the invention generally demonstrated an MIC in the range from about 64  $\mu g/mL$  to about 0.03  $\mu g/mL$ .

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS) RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN AN 2004:100793 CAPLUS <<LOGINID::20101109>>

DN 140:146396

TI Preparation of 6,11-4-carbon bridged macrolide

ketolides erythromycin analogs as antibacterial agents

IN Or, Yat Sun; Wang, Guoqiang; Niu, Deqiang; Phan, Ly Tam

PA Enanra Pharmaceuticals, Inc., USA

SO U.S. Pat. Appl. Publ., 41 pp. CODEN: USXXCO

DT Patent

LA English FAN.CNT 10

|           | PATENT NO. |                      |       |     |     |     |     | DATE |      |     |      |      |      |      |       |     |      |     |
|-----------|------------|----------------------|-------|-----|-----|-----|-----|------|------|-----|------|------|------|------|-------|-----|------|-----|
| PI        |            | 2004<br>6841<br>2004 |       |     |     |     |     |      |      |     |      |      |      |      |       |     |      |     |
|           | US         | 6841                 | 664   |     |     | B2  |     | 2005 | 0111 |     |      |      |      |      |       |     |      |     |
|           | WO         | 2004                 | 0114  | 77  |     | A2  |     | 2004 | 0205 | 1   | WO 2 | 003- | US20 | 864  |       | 2   | 0030 | 601 |
|           | WO         | 2004                 | 0114  | 77  |     | A3  |     | 2004 | 0318 |     |      |      |      |      |       |     |      |     |
|           |            | W:                   | ΑE,   | AG, | AL, | AM, | AT, | AU,  | AZ,  | BA, | BB,  | BG,  | BR,  | BY,  | BZ,   | CA, | CH,  | CN, |
|           |            |                      | CO,   | CR, | CU, | CZ, | DE, | DK,  | DM,  | DZ, | EC,  | EE,  | ES,  | FI,  | GB,   | GD, | GE,  | GH, |
|           |            |                      | GM,   | HR, | HU, | ID, | IL, | IN,  | IS,  | JP, | KE,  | KG,  | KP,  | KR,  | KZ,   | LC, | LK,  | LR, |
|           |            |                      | LS,   | LT, | LU, | LV, | MA, | MD,  | MG,  | MK, | MN,  | MW,  | MX,  | MZ,  | NO,   | ΝZ, | OM,  | PH, |
|           |            |                      | PL,   | PT, | RO, | RU, | SC, | SD,  | SE,  | SG, | SK,  | SL,  | ΤJ,  | TM,  | TN,   | TR, | TT,  | TZ, |
|           |            |                      |       |     |     |     |     | YU,  |      |     |      |      |      |      |       |     |      |     |
|           |            | RW:                  |       |     |     |     |     |      |      |     |      |      |      |      |       |     |      |     |
|           |            |                      |       |     |     |     |     | TM,  |      |     |      |      |      |      |       |     |      |     |
|           |            |                      |       |     |     |     |     | ΙE,  |      |     |      |      |      |      |       |     |      |     |
|           |            |                      | BF,   | ВJ, | CF, | CG, | CI, | CM,  | GΑ,  | GN, | GQ,  | GW,  | ML,  | MR,  | ΝE,   | SN, | TD,  | TG  |
|           | ΑU         | 2003<br>1910<br>2005 | 2816  | 94  |     | A1  |     | 2004 | 0216 | - 1 | AU 2 | 003- | 2816 | 94   |       | 2   | 0030 | 601 |
|           | CN         | 1910                 | 171   |     |     | A   |     | 2007 | 0207 |     | CN 2 | 004- | 8004 | 0152 |       | 2   | 0040 | 114 |
|           | US         | 2005                 | 0009  | 761 |     | A1  |     | 2005 | 0113 | 1   | US 2 | 004- | 7633 | 77   |       | 2   | 0040 | 123 |
|           |            | 2004                 |       | 998 |     | A1  |     |      |      |     | US 2 | 004- | 8412 | 06   |       | 2   | 0040 | 507 |
|           | US         | 7049                 | 417   |     |     | B2  |     | 2006 | 0523 |     |      |      |      |      |       |     |      |     |
|           | IN         | 2006<br>2356<br>2009 | DM03. | 703 |     | A   |     | 2007 | 0713 |     | IN 2 | 006- | DN37 | 03   |       | 2   | 0060 | 628 |
|           | IN         | 2356                 | 36    |     |     | A1  |     | 2009 | 0731 |     |      |      |      |      |       |     |      |     |
|           | IN         | 2009                 | DN02  | 067 |     | A   |     | 2009 | 0515 |     | IN 2 | 009- | DN20 | 67   |       | 2   | 0090 | 327 |
| PRAI      |            | 2002                 |       |     |     |     |     | 2002 |      |     |      |      |      |      |       |     |      |     |
|           |            | 2002                 |       |     |     |     |     | 2002 |      |     |      |      |      |      |       |     |      |     |
|           |            | 2002                 |       |     |     |     |     | 2002 |      |     |      |      |      |      |       |     |      |     |
|           | US         | 2002                 | -205  | 357 |     | A2  |     | 2002 |      |     |      |      |      |      |       |     |      |     |
|           | US         | 2003                 | -429  | 485 |     | A2  |     | 2003 |      |     |      |      |      |      |       |     |      |     |
|           | US         | 2003                 | -436  | 622 |     | AZ  |     | 2003 |      |     |      |      |      |      |       |     |      |     |
|           | WO         | 2003                 | -USZI | 100 |     | W   |     | 2003 | 0601 |     |      |      |      |      |       |     |      |     |
|           |            | 2003                 |       |     |     |     |     |      |      |     |      |      |      |      |       |     |      |     |
|           |            | 2004                 |       |     |     |     |     | 2004 |      |     |      |      |      |      |       |     |      |     |
| A C C T C |            | 2006                 |       |     |     |     |     |      |      | E T | и те | HC D | терт | AV E | ODMAG | r   |      |     |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT OS MARPAT 140:146396

- AB Novel 6,11-4-carbon bridged ketolides I, wherein W is substituted alkylidene, X and Y are independently H, deuterium, OH, alkoxy, amine; XY are together CO, imine, oxime, amide; L is hydroxy-alkyl, alkyl, alkenyl, alkynyl; Z is H, Me, halogen; Rx is hydroxy protecting group, pharmaceutically-acceptable compns. comprising a therapeutically effective amount of a compound of the invention in combination with a pharmaceutically-acceptable carrier are described. Also described are a method for treating bacterial infections by administering to an animal a pharmaceutical composition containing a therapeutically effective amount of
  - a compound of the invention and processes for the preparation of such compds. Thus, I (W is -CH2CH=CHCH2-, X and Y taken together with the carbon atom they are attached to form C=NC(O)CH3, L is Et, Z = Rx = H) was prepared and tested in vitro as antibacterial agent. The compds. of the invention generally demonstrated antibacterial activity in vitro with an MIC in the range from about 64 µg/mL to about 0.03 µg/mL.
- RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L3 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 2000:332358 CAPLUS <<LOGINID::20101109>>
- ΤI Design, synthesis, and antibacterial activity of 6,11-bridged erythromycin analogs.
- ΑU Li, Leping; Rupp, Michael; Ma, Zhenkun; Griesgraber, George; Henry, Roger; Or, Yatsun; Chu, Daniel
- Infectious Disease Research, Abbott Laboratories, Abbott Park, IL, 60064, CS
- Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), ORGN-232 Publisher: American Chemical Society, Washington, D. C. CODEN: 69CLAC
- DT Conference: Meeting Abstract
- LA English
- AB Erythromycin and the second generation macrolide antibiotics, such as Clarithromycin and Azithromycin, have enjoyed tremendous clin. and com. success in treating various bacterial infections caused by gram-pos. pathogens. However, the emergence of macrolide resistant bacteria has accelerated the search for the next generation of macrolide antibiotics. To this end, a series of 6,11-linked erythromycin derivs., as represented by compds. 1 and 2, were designed with addnl. conformational rigidity and the exploitation of secondary binding interactions in mind. The syntheses of these compds. were built on the success of the effective functionalizations of the C-6 OH group recently reported from these labs. (37th ICAAC Posters F125 and F126, 1998). The macrocyclizations were

accomplished by intromol. lactonizations, Heck reactions, or ring closure olefin metatheses. The detailed synthesis, structure characterization, and the structure-activity relationship evaluation will be presented.

- ANSWER 24 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN L3
- AN 2000:220726 CAPLUS <<LOGINID::20101109>>
- DN 132:237323
- Preparation of 6,11-bridged erythromycins as
- bactericides
- IN Or, Yat Sun; Griesgraber, George; Li, Leping; Chu, Daniel T.
- PA Abbott Laboratories, USA
- SO U.S., 29 pp.
- CODEN: USXXAM
- DТ Patent
- LA English
- FAN.CNT 1

| I      | PATENT NO.           | KIND   | DATE      | APPLICATION NO.        | DATE     |
|--------|----------------------|--------|-----------|------------------------|----------|
|        |                      |        |           |                        |          |
| PI U   | JS 6046171           | A      | 20000404  | US 1998-158459         | 19980922 |
| PRAI U | JS 1997-63712P       | P      | 19971029  |                        |          |
| ASSIGN | NMENT HISTORY FOR US | PATENT | AVAILABLE | IN LSUS DISPLAY FORMAT |          |
| OS 1   | MARPAT 132:237323    |        |           |                        |          |

- GT
- \* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT \*
- AR Macrolide 6,11-bridged erythromycins I
- wherein, m is 0-7; n is 0-4; R is independently hydrogen or a hydroxy protecting group at each occurrence; A is absent or is selected from the group consisting of -O-, and -N(R1)-, wherein R1 is hydrogen or C-C6-alkyl optionally substituted with aryl or heteroaryl; B is absent or is selected from the group consisting of -(CH)q-, wherein q is 0-6, -C(0)(CH2)q-, -C(0)O(CH2)q-, -C(0)NR1(CH2)q-, wherein R1 is as defined previously, and -N=CH-(CH2)-; -CH(OH)(CH2)q-, and -CH(OH)(CH(OH)(CH2)q-; D is absent or is selected from the group consisting of alkenylene, arylene, substituted arylene, heteroarylene, substituted heteroarylene; alkenylene-arylene, arylene-arylene, substituted arylene-arylene, heteroarylene-arylene, substituted heteroarvlene-arvlene, alkenvlene-heteroarvlene, arvlene-heteroarvlene, substituted arvlene-heteroarvlene, heteroarylene-heteroarylene, and substituted heteroarylene-heteroarylene; E is absent or is selected from the group consisting of -(CH2)xCH=CH-, -(CH2)xO-, wherein x is 0-4, -(CH2)xNR1CH2CH(OH)-, wherein R1 is as defined previously, -(CH2)xC(0)0-, -(CH2)xNR1-, -(CH2)OC(0)-,

-(CH2)xC(O)NR1- and -(CH2)xNR1C(O)-; FG is O; F = sugar residue L, G = H, were prepared as antibacterial agents. Thus I, 2'-R is H, 4"-R is acetyl, m is 2, A is NH, B is -C(O)-, D is 1,3-phenylene, E is -CH=CH-, n is 1 was

prepared and tested for its antibacterial activity.

OSC.G 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS) RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- ANSWER 25 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN L3 AN 1999:299483 CAPLUS <<LOGINID::20101109>>
- DN 130:312022
- Preparation of 6,11-bridged erythromycins as
  - antibacterial agents
- Or, Yat Sun; Griesgraber, George; Li, Leping; Chu, Daniel T. TN
- PΑ Abbott Laboratories, USA

SO PCT Int. Appl., 77 pp. CODEN: PIXXD2

DT Patent LA English

|  | CNT 1          |           |                   |                                 |                  |
|--|----------------|-----------|-------------------|---------------------------------|------------------|
|  | PATENT NO.     |           | DATE              | APPLICATION NO.                 | DATE             |
| PI WO 9921864  |                |           |                   |                                 |                  |
| PI   |                |           |                   | BG, BR, BY, CA, CH,             |                  |
|  |                |           |                   | GH, GM, HR, HU, ID,             |                  |
|  |                |           |                   | LS, LT, LU, LV, MD,             |                  |
|  |                |           |                   | SD, SE, SG, SI, SK,             |                  |
|  | TT, UA         | , UG, UZ, | VN, YU, ZW        |                                 |                  |
|  |                |           |                   | UG, ZW, AT, BE, CH,             |                  |
|  |                |           |                   | MC, NL, PT, SE, BF,             | BJ, CF, CG, CI,  |
|  | CM, GA         | , GN, GW, | ML, MR, NE,       | SN, TD, TG                      |                  |
|  | ZA 9809848     | A         | 19990429          | ZA 1998-9848<br>CA 1998-2307828 | 19981028         |
|  | CA 2307828     | Al        | 19990506          | CA 1998-2307828                 | 19981029         |
|  | AU 9912867     | A 3.1     | 20000016          | AU 1999-12867<br>EP 1998-956314 | 19981029         |
|  | EP 1027361     |           |                   |                                 | 19901029         |
|  |                |           |                   | GB, GR, IT, LI, LU,             | NI. SE. PT. TE.  |
|  | SI, FI         | , RO      |                   | 05, 01, 11, 21, 20,             | 112, 02, 11, 12, |
|  | BR 9813317     | A         |                   | BR 1998-13317                   |                  |
| HU 2000004323  |                | A2        | 20010228          | HU 2000-4323                    |                  |
| TR 2000004323<br>TR 2000001140<br>JP 2001521038<br>AT 239750<br>PT 1027361 |                | T2        | 20010521          | TR 2000-1140                    | 19981029         |
| JP 2001521038  |                | T         | 20011106          | JP 2000-517973                  | 19981029         |
|  | AT 239750      | T         | 20030515          |                                 |                  |
|  | ES 2198766     | E         | 20030930 20040201 |                                 |                  |
|  | TW 486485      | 13        | 20040201          |                                 |                  |
|  | NO 2000002099  | 2         | 20020511          |                                 |                  |
|  | MX 2000004227  |           |                   | MX 2000-4227                    |                  |
|  | BG 104425      | A         | 20010131          | BG 2000-104425                  |                  |
| PRAI   | US 1997-960400 | A         | 19971029          |                                 |                  |
|  | US 1998-158269 | A         | 19980922          |                                 |                  |
| US 1998-158269<br>WO 1998-US22941  |                |           | 19981029          |                                 |                  |
| os   | MARPAT 130:312 | 022       |                   |                                 |                  |
| GI   |                |           |                   |                                 |                  |

Ι

- AB Macrolide erythromycins I (m = 1-7; n = 1-4; R = H, OH protecting group; A = absent, O, NR1; R1 = H, alkyl; B = absent, alkylidene, keto, amide; D = absent, alkenyl, aryl, heteroaryl; E = absent, carbon chain or one of the carbon is replaced by O, NR1) were prepared as antibacterial agents. Thus, I (m = 3; n = 1; R = H; A, B, D, E = absent) was prepared and tested for its antibacterial activity (MICs = 0.03-100 ug/mL).
- OSC.G 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)
  RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
  ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L3 ANSWER 26 OF 26 CAPLUS COPYRIGHT 2010 ACS on STN
- AN 1989:39320 CAPLUS <<LOGINID::20101109>>
- DN 110:39320
- OREF 110:6571a,6574a
- TI Preparation of erythromycin derivatives and their pharmaceutical
- compositions for inhibiting virus replication and disease
- IN Robinson, William S.
- PA USA
- SO Eur. Pat. Appl., 14 pp.
- CODEN: EPXXDW DT Patent
- LA English
- FAN.CNT 1

| PI EP 254534 A2 19880127 EP 1987-306445 1987072 EP 254534 A3 19910417 R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE FI 8703128 A 19880125 FI 1987-3128 1987072 A 19880512 JP 1987-181266 1987072 A 8705390 A 19881130 ZA 1987-5390 1987072 |    |
|--|----|
| R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE<br>FI 8703128 A 19880125 FI 1987-3128 1987072<br>JP 63107921 A 19880512 JP 1987-181266 1987072   | 21 |
| FI 8703128 A 19880125 FI 1987-3128 1987073<br>JP 63107921 A 19880512 JP 1987-181266 1987073  |    |
| JP 63107921 A 19880512 JP 1987-181266 1987072  |    |
|  | 15 |
| ZA 8705390 A 19881130 ZA 1987-5390 1987072   | 22 |
|  | 22 |
| DK 8703843 A 19880125 DK 1987-3843 1987072   | 23 |
| AU 8776055 A 19880128 AU 1987-76055 1987072  | 23 |
| HU 44439 A2 19880328 HU 1987-3398 1987072  | 23 |
| PRAI US 1986-889791 A 19860724   |    |
| US 1986-948232 A 19861231  |    |
| US 1987-3080 A 19870114  |    |
| US 1987-69791 A 19870706   |    |
| OS MARPAT 110:39320<br>GI  |    |

Ι

II

AB The title compds. [I; T = OH or a pharmaceutically acceptable organic substituent attached to C5 through O; V = OH or a pharmaceutically acceptable organic substituent attached to C3 through O; U = H, OH, C1-10 alkoxy or acyloxy, or U at C6 and H at C7 are removed to form a double bond, or UX = an ether bridge; Y = H, OH, C1-10 alkoxy or acyloxy, OCH2SO2Me, OCH2SOMe, sulfate or sulfonate bonded to C11 through O; Y and H at C10 are removed to form a double bond or YW complete a 5- to 7-membered heterocyclic ring together with C9, C10, and C11 of the macrolide ring; Z, X, W = H, OH, C1-10 acvloxy or alkoxy; optionally XW = 0 or S, XU or WY as defined above, or Z and H of C13 form a double bond] and II [T, V = OH or a sugar residue; A = H, C1-10 acyloxy or OA and H at C6 are removed to form a double bond or AG = bond or a vinyl ether bridge; B = H, acyl, CH2SO2Me, CH2SMe; D = H, DE = a double bond, or EG = oximinoether where O is substituted with a C1-20 pharmaceutically acceptable organic substituent; R = H, OH], which inhibit virus replication and disease, were prepared To a solution of 86.84 g erythromycin A in MeOH was added 39.2 g MeONH2.HCl. After stirring for 10 min, 32.86 mL Et3N was added and the mixture was stirred for 20 h to give 34.7 gm crude erythromycin 9-0-methyloxime (III). Recrystn. of 34 g crude III using C12CH2 and Et2O gave 19.0 g pure III as a mixture of (E)- and (Z)-isomers which were separated by preparative HPLC on a C-18 column with the solvent system MeOH/0.1M (NH4)HCO3 (85/15). A T-cell line (VB) infected with human T-lymphotropic virus III was incubated with 20 ug/mL III in the tissue culture medium for 0-4 days. Virus particle-associated reverse-transcriptase and viral antigen (p-24) in the medium were reduced by 82% and 86%, resp.

THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)